

COUNTRY ANALYSIS BRIEFS

Cote d'Ivoire

Last Updated: May 2006

Background

Energy production in Côte d'Ivoire's has helped bolster the country's economic growth.

Côte d'Ivoire is a sub-Saharan African country that gained its independence from France in 1960. For nearly 40 years following independence, Côte d'Ivoire enjoyed relative peace and economic growth until the country's first coup in 1999. In 2000, a controversial election ushered in President Laurent Gbagbo. Gbagbo's presidency withstood an attempted coup in 2002; however, the failed coup did ignite a civil war between the government-controlled southern provinces and the rebel army, which controlled the northern and western provinces. Côte d'Ivoire is set to hold presidential and general elections in October 2006. Two prerequisites to holding fair elections in October are the disarmament of combatants and a population census, which, to date, have both been delayed.



In spite of the civil turmoil, the almost 40 years of peace (prior to 1999) allowed Côte d'Ivoire to construct infrastructure that has supported economic growth, with extensive paved roads and good telecommunication services. One of the country's two ports, Abidjan, is the largest port in West Africa. During the peaceful years, Côte d'Ivoire's main source of revenue came from exporting cocoa, coffee and timber. In the past six years, economic growth from the non-oil sector has been minimal due to the affects of the country's civil war. However, the oil industry, which is primarily located offshore, has been relatively unaffected by the civil strife. In addition, new fields are coming online, which are helping to bolster economic growth in the country. In 2005, Côte d'Ivoire's gross domestic product (GDP) grew by 1.1 percent and it is expected to grow at a 2.2 percent rate in 2006. In 2005, analysts estimated the country's inflation to be 3.0 percent and it is expected to hold at 3.0 percent through 2006.

In 2002, the International Monetary Fund (IMF) approved a Poverty Reduction and Growth Facility (PRGF). However, due to civil conflict, the PRGF became inoperative and expired in March 2005. The IMF has proposed the possibility of a new PRGF and a Heavily Indebted Poor Country (HIPC) initiative for 2007, if the security and political situation in the country continues to improve. The World Bank has frozen all financial assistance to Côte d'Ivoire, due to arrears accumulation. Analysts estimate that debt servicing represents 56 percent of the Ivorian government revenue

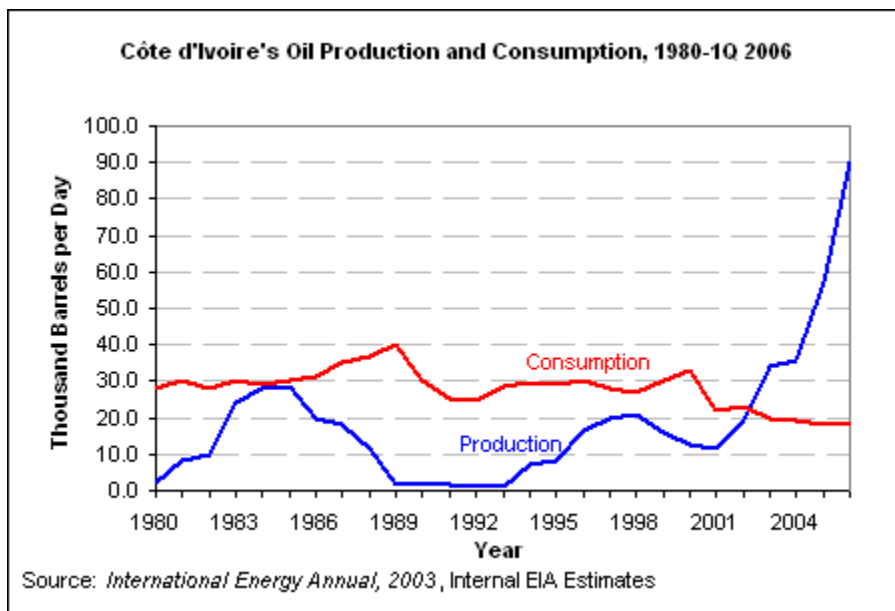
and public debt accounts for close to 83 percent of GDP.

Côte d'Ivoire is a member of the 15-nation [Economic Community of West African States \(ECOWAS\)](#). Regional leaders established ECOWAS to promote integration and economic growth in West Africa, as well as to create a monetary union in the region. Côte d'Ivoire is also the leading member of the West African Economic and Monetary Union (UEMOA), accounting for 36 percent of the group's combined GDP. UEMOA is composed of eight West African states (Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo) that share the same currency (the CFA franc). In September 1998, the Abidjan Stock Exchange was replaced by the Bourse Régionale des Valeurs Mobilières (BRVM), which serves as the regional exchange for the member nations of the UEMOA.

Oil

The vast majority of Côte d'Ivoire's oil wells are located offshore.

According to January 1, 2006 estimates by the *Oil and Gas Journal* (OGJ), Côte d'Ivoire has proven crude oil reserves of 100 million barrels. The vast majority of the proven oil reserves are located offshore in shallow marine areas and in deep offshore waters. Crude oil produced in Côte d'Ivoire is primarily medium and sweet with an API of 33°.



Sector Organization

In 1975, Côte d'Ivoire established the national oil company, Société Nationale d'Operations Pétrolières de la Côte d'Ivoire (Petroci). In 1998, the government re-structured Petroci, creating four new entities: Petroci Holding, a fully state-owned company that is responsible for the state's portfolio management in the oil sector and the three subsidiaries; Petroci Exploration-Production, responsible for upstream hydrocarbon activities; Petroci-Gaz, responsible for the natural gas sector; and Petroci Industries-Services, responsible for all other related services. Up to 49 percent interest in the three subsidiaries is available to private sector investors. Foreign companies involved in Côte d'Ivoire's oil sector include Canadian Natural Resources (CNR), Dana Petroleum (U.K.), Devon Energy (U.S.), Oil India, Pluspetrol (Argentina), Sinopec (China), and Vanco Energy Company (U.S.).

Exploration and Production

Canadian Natural Resources

In 2005, Côte d'Ivoire produced 56,000 barrels per day (bbl/d) of crude oil; however, with CNR's Baobab field now producing, oil production during the first quarter of 2006 averaged 90,000 bbl/d. In August 2005, CNR brought their Baobab oil field onstream, with initial production averaging 48,000 bbl/d. The field is located offshore in Block CI-40 and production on the field is expected to reach 65,000 bbl/d by the end of 2006. CNR is operator of the block with a 57.6 percent interest and is joined with partners Svenska Petroleum Exploration (27.4 percent), Petroci Overseas (10 percent), and Petroci Holding (5 percent). CNR is also operator of Block CI-26 and holds an interest in Block CI-400. The Espoir field, which is located in Block CI-26, had first oil come onstream in 2002. Production at the field, which has a life expectancy of 20 to 25 years, is

expected to peak at 35,000 bbl/d of oil. CNR announced that development of the West Espoir field began in mid-2005, with production expected to start in mid-2006. CNR holds 58.7 percent interest in the block and is joined with partners Tullow Oil (21.3 percent) and Petrosi (20 percent).

Devon Energy

Devon Energy Corporation operates the Lion oil field on Block CI-11, with production averaging 20,000 bbl/d of oil. Devon's partners on Block CI-11 include Petroci, Pluspetrol of Argentina, and International Finance Corporation. In addition to Block CI-11, Devon holds interests (ranging from 35 percent to 80 percent) in several other blocks in Côte d'Ivoire including offshore block CI-01, which contains the Kudu, Eland and Ibex fields; Block CI-02, which contains the Gazelle field and CI-105, Côte d'Ivoire's first deep-water offshore block.

Vanco Energy

Vanco Energy Company has estimated oil to be located in the San Pedro ridge and other deposits in Block CI-112 off the western coast of Côte d'Ivoire. India's Oil and Natural Gas Corporation (ONGC) (21.2 percent), Oil India (10.4 percent) and China's Sinopec (27 percent) signed on to the CI-112 project in December 2004, reducing Vanco's stake to 27 percent. In March 2005, Vanco drilled the San Pedro 1 well on Block CI-112, but later plugged the well due to a lack of hydrocarbons. In October 2005, Vanco signed two production sharing agreements (PSAs) with Côte d'Ivoire for Blocks CI-401 and CI-101. Combined, the two blocks are estimated to contain potential reserves of 345 million barrels of oil.

Other Companies

In February 2006, Yam's Petroleum won three blocks in Côte d'Ivoire, which include CI-100, CI-110 and CI-111. Irish-based, Tullow Oil operates Blocks CI-107 and CI-108 and has performed seismic surveys of the two blocks. The company is also negotiating with Côte d'Ivoire for Blocks CI-102 and CI-103. U. K.-based Dana Petroleum has an exploration agreement with Côte d'Ivoire for Block CI-100, which is located directly west of acreage held by Dana in Ghana. In 2003, Tullow Oil discovered oil in the Acajou prospect, which is located on license CI-26.

Refining and Downstream

Côte d'Ivoire's refining facilities consist of the 65,200-bbl/d SIR refinery and an adjacent 10,000-bbl/d asphalt plant (Société Multinationale de Bitumes-SMB) in Abidjan. An oil pipeline connects the SIR refinery to the Lion and Panther fields. The refinery also receives crude oil from Nigeria. The state currently owns 47.3 percent of SIR, and expects to retain a 10 percent interest after privatization, due to take place when the political situation in the country improves. Burkina Faso owns a 5.39 percent stake in SIR, and Total, Shell, ExxonMobil and Chevron own the remainder.

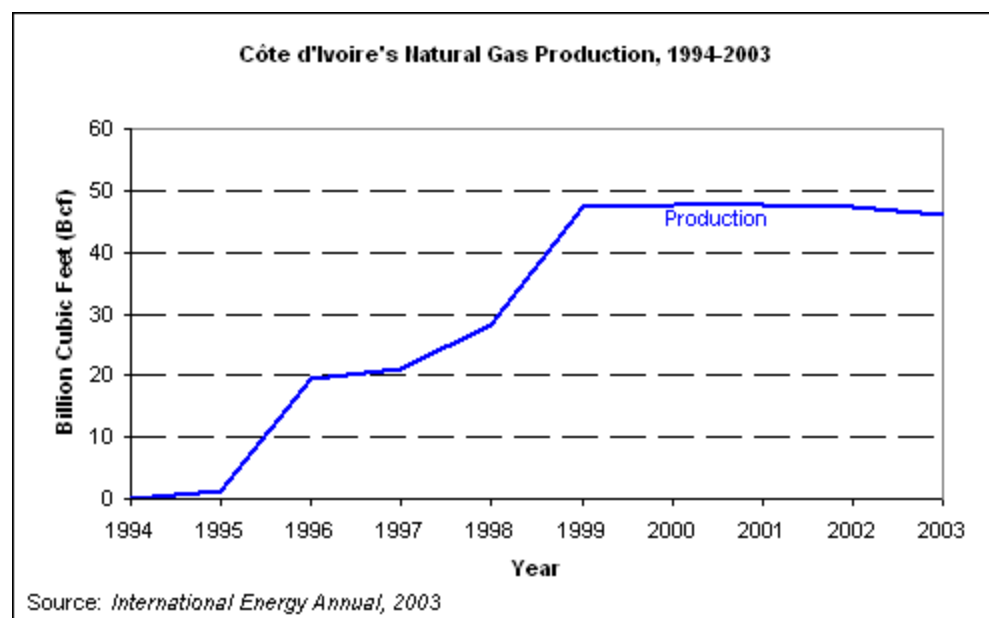
A petroleum products depot, adjacent to SIR, stores petroleum products for domestic use as well as for export. The depot, owned by the Société de Gestion des Stocks Pétroliers de Côte d'Ivoire (Gestoci) supplies products to Mali, Burkina Faso, Niger and Chad. Gestoci also operates fuel depots in Bouake and Yamoussoukro.

The Ivorian government wants to restructure Gestoci by selling 66 percent of the company to private investors. The government anticipates that refinery expansion coupled with upgrades to Gestoci's Abidjan storage facilities will transform the country into a distribution hub of refined petroleum products on Africa's Atlantic seaboard. A products pipeline from Abidjan to Bouake and a separate line from Abidjan to Takoradi, Ghana are being considered. The line, if constructed, may be extended to Burkina Faso, Guinea and Mali. Several foreign oil companies (and one local firm, Petrolivoire) are involved in the distribution and marketing of refined products in Côte d'Ivoire. Agip, ExxonMobil, Chevron, Total and Shell control over 90 percent of the downstream retail sector.

Natural Gas

Natural gas is an important part of Côte d'Ivoire's energy mix.

According to 2006 estimates by the *Oil and Gas Journal (OGJ)*, Côte d'Ivoire has 1.0 trillion cubic feet of proven natural gas reserves. Although exploration teams first discovered natural gas in Côte d'Ivoire in the 1980s, it was not until the mid-1990s that companies began to develop the resource. In 2003, Côte d'Ivoire produced 46 billion cubic feet (Bcf) of natural gas, while consuming 46 Bcf. The Ivorian government estimates that natural gas consumption will grow by 50 percent over the next three years. Currently, natural gas is primarily used in Côte d'Ivoire to generate electricity through natural gas-powered stations.



Côte d'Ivoire's largest producing natural gas field is the Foxtrot field in offshore Block CI-27. Foxtrot contains estimated recoverable natural gas reserves of 300 Bcf, and the field produces around 80 million cubic feet per day (Mmcf/d). The Manta field is also located in Block CI-27 and in December 2005, the Mahi-1 well began producing natural gas at 32 Mmcf/d. The Block is operated by Foxtrot International (24 percent interest) and partners include Petroci (40 percent), SECI; a member of the Bouygues group of France (24 percent), and Energie de Côte d'Ivoire (Enerci); a joint venture of Gaz de France and EdF Group (12 percent).

Devon Energy Corporation operates offshore Block CI-11, with natural gas reserves estimated at 495 Bcf. Natural gas production from the block primarily comes from Panther field (70 Mmcf/d) and is supplied to Compagnie Ivoirienne d'Electricite for electricity generation. Devon also operates Block CI-01 with fields Kudo, Eland and Ibex and Block CI-02 with Gazelle field.

CNR operates the Espoir field, which is located offshore in Block CI-26. CNR estimates Espoir's proven natural gas reserves to be 150 billion cubic feet (Bcf). CNR announced that development of the West Espoir field began in mid-2005, with production expected to start in mid-2006. CNR holds 58.7 percent interest in the block and is joined with partners Tullow Oil (21.3 percent) and Petrosi (20 percent).

Electricity

The majority of Côte d'Ivoire's electricity is generated through natural gas-powered stations.

As of January 1, 2003, Côte d'Ivoire had installed electric generation capacity of 919 megawatts (MW). In 2003, Côte d'Ivoire generated 5.1 billion kilowatthours (Bkwh) of electricity, while consuming 3.4 Bkwh. The majority of electricity is generated through conventional thermal stations (68 percent), with hydroelectricity comprising the remainder (32 percent). The 288-MW Azito power station, brought online in 1999, is located in Abidjan's suburbs and produces more than a third of the country's power. The phased construction of a third turbine in Azito has been delayed pending a satisfactory rise in domestic and regional demand for electricity through the West African Power Pool (WAPP). In May 2005, Alstom signed a 10 year service contract for the Azito plant. Côte d'Ivoire's main hydroelectric plants include Ayame I and II, Kossou, Taabo, Buyo and Grah. Electricity generated through hydroelectric plants is expected to decrease in the coming years, with the increase in electricity generated through natural gas-fired power plants.

The use of gas-fired electricity plants has turned the country into a regional exporter of electricity. Countries connected to the Ivoirian power grid include Benin, Togo, Mali, Burkina Faso and Ghana. An additional connection to Guinea is being studied. The government has made rural electrification a main priority, aiming to connect 200 rural districts to the national grid every year. According to official estimates, less than 15 percent of the population living in rural areas has access to electricity, compared with 77 percent in urban areas and 88 percent in Abidjan. The Compagnie Ivoirienne d'Electricité (CIE), which is 51 percent owned by a subsidiary of France's Bouygues group, has a monopoly on electricity supply. CIE handles the management of the government-owned generation facilities as well as transmission and distribution of electricity.

West African Power Pool (WAPP)

In an effort to improve power reliability and encourage private sector investment, the Economic Community of West African States (ECOWAS) has been working to establish the West African Power Pool (WAPP). In October 2000, 14 ECOWAS members signed an agreement to launch a project to boost power supply in the region. The WAPP agreement reaffirmed the decision to develop energy production facilities and interconnect their respective electricity grids. In December 2003, ECOWAS Heads of State signed the ECOWAS Energy Protocol, which provides open and non-discriminatory access to power generation sources and transmission facilities. In order to fully establish the WAPP within ECOWAS, project managers have identified four phases of the project that will be carried out over a 20-year period. Currently, ECOWAS Member States are working to complete phase one, which will provide a legal framework for the WAPP. In addition, Member States are linking interconnection lines between zone A countries (Burkina Faso, Côte d'Ivoire, Ghana, Niger and Togo) and zone B countries (Cape Verde, the Gambia, Guinea, Guinea Bissau, Liberia, Mali, Senegal and Sierra Leone). The second phase (2007 – 2012) includes building missing links along Nigeria's coastal line, development of new institutional entities and implementing policies from phase one. Phases three and four (2012 – 2023) involve making the system fully operational.

Profile

Country Overview

President	Laurent Gbagbo (since October 26th, 2000)
Location	Western Africa, bordering the North Atlantic Ocean, between Ghana and Liberia
Independence	7 August 1960 (from France)
Population (2005E)	17,298,040
Languages	French (official), 60 native dialects with Dioula the most widely spoken
Religion	Christian 20-30%, Muslim 35-40%, indigenous 25-40% (2001) note: the majority of foreigners (migratory workers) are Muslim (70%) and Christian (20%)
Ethnic Group(s)	Akan 42.1%, Voltaiques or Gur 17.6%, Northern Mandes 16.5%, Krous 11%, Southern Mandes 10%, other 2.8% (includes 130,000 Lebanese and 14,000 French) (1998)

Economic Overview

Minister of Economic Affairs and Finance	Paul Bohoun Bouabré
Currency/Exchange Rate (5/24/06)	1 Communauté Financière Africaine (CFA) franc = US\$0.0019
Inflation Rate	(2005E): 3.0% (2006F): 3.0%
Gross Domestic Product	(2005E): \$16.3 billion (2006F): \$17.1 billion
Real GDP Growth Rate	(2005E): 1.1% (2006F): 2.2%
External Debt	(2005E): \$13.3 billion
Exports	(2005E): \$6.85 billion
Exports - Commodities	cocoa, coffee, timber, petroleum, cotton, bananas, pineapples, palm oil, fish
Exports - Partners (2004E)	US 11.3%, Netherlands 10.1%, France 9.4%, Italy 5.3%, Belgium 4.7%, Germany 4.3%
Imports	(2005E): \$3.45 billion
Imports - Commodities	fuel, capital equipment, foodstuffs
Imports - Partners (2004E)	France 24.7%, Nigeria 18.5%, Italy 4%
Current Account Balance	(2005E): \$114 million

Energy Overview

Minister of Mines and Energy	Léon Emanuel Monnet
Proven Oil Reserves (January 1, 2006E)	0.1 billion barrels
Oil Production (2005E)	53.8 thousand barrels per day, of which 98% was crude oil.

Oil Consumption (2005E)	17.7 thousand barrels per day
Crude Oil Refining Capacity (2006E)	65.2 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2006E)	1 trillion cubic feet
Natural Gas Production (2003E)	46 billion cubic feet
Natural Gas Consumption (2003E)	46 billion cubic feet
Electricity Installed Capacity (2003E)	0.9 gigawatts
Electricity Production (2003E)	5.1 billion kilowatt hours
Electricity Consumption (2003E)	3.4 billion kilowatt hours
Total Energy Consumption (2003E)	0.1 quadrillion Btus*, of which Natural Gas (45%), Oil (40%), Hydroelectricity (17%), Coal (0%), Nuclear (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2003E)	6.1 million Btus
Energy Intensity (2003E)	4,315.4 Btu per \$2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	5.4 million metric tons, of which Oil (53%), Natural Gas (47%), Coal (0%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)	0.3 metric tons
Carbon Dioxide Intensity (2003E)	0.2 Metric tons per thousand \$2000-PPP**
Environmental Issues	deforestation (most of the country's forests - once the largest in West Africa - have been heavily logged); water pollution from sewage and industrial and agricultural effluents
Major Environmental Agreements	party to: Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands signed, but not ratified: none of the selected agreements

Oil and Gas Industry

Organization	Petrolières de la Côte d'Ivoire (Petroci) has four operation subsidiaries (Petroci-holding, Petroci-Exploration/Production, Petroci-Gaz, and Petroci-industries/Services)
Foreign Company Involvement	Addax, Canadian Natural Resources, Dana Petroleum, Energy Africa, ENI-Agip, ExxonMobil, Gentry, Gulf Canada, Mondoil, Devon Energy, PanCanadian Petroleum, Pluspetrol, Shell, Santa Fe Snyder, Stratic Energy, Texaco, Total, Tullow, Vanco Energy
Major Oil Fields	Lion, Panther
Major Natural Gas Fields	Foxtrot, Kudu, Panther
Major Refineries	Société Ivoirienne de Raffinage (SIR) – Abidjan (), Société Multinationale des Bitumes (SMB) – Abidjan ()

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

U.S. Government

[U.S. State Department Background Notes on Côte d'Ivoire](#)

[U.S. State Department's Consular Information Sheet on Côte d'Ivoire](#)
[U.S. Embassy in Côte d'Ivoire](#)
[U.S. Department of Energy's Office of Fossil Energy's International Section - Côte d'Ivoire](#)
[CIA World Factbook - 2005](#)
[Library of Congress - Côte d'Ivoire Country Study](#)

General Information

[IMF - Côte d'Ivoire Information page](#)
[World Bank - Côte d'Ivoire Information page](#)
[Economic Community of West African States \(ECOWAS\)](#)
[University of Pennsylvania - Côte d'Ivoire Information page](#)
[Columbia University - Côte d'Ivoire information page](#)
[Mbendi - Côte d'Ivoire Profile](#)
[Washington Post Côte d'Ivoire page](#)
[allAfrica News - Côte d'Ivoire](#)
[Abidjan Post](#)
[Société Ivoirienne de Raffinage \(SIR\)](#)

Sources

African Energy
Agence France Press
AllAfrica.com
Associated Press
BBC News
CIA World Factbook
Economist Intelligence Unit Views Wire
Factiva
Global Insight
MBendi Information Services
New York Times
Oil & Gas Journal
Reuters News Wire
UN Integrated Regional Information Networks (IRIN)
U.S. Energy Information Administration
U.S. Department of State
Washington Post
World Markets Online
XE.com

Contact Info

Elias Johnson
202-586-7727
Elias.Johnson@eia.doe.gov